

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

A-642
WACO
UPF-7
VPF-7

June 30, 1949

AIRCRAFT SPECIFICATION NO. A-642

Manufacturer Waco Aircraft Co.
 Troy, Ohio

I - Model UPF-7, 2 POLB, Approved June 5, 1937

(Same as Model YPF-7, ATC 586, except for engine installation).

Engine	Continental W670K (See Item 325 for optional engines).		
Fuel	65 min. octane aviation gasoline		
Engine limits	For all operations, 2175 rpm (225 hp)		
Airspeed limits	Level flight or climb	158 m.p.h.	True Ind.
	Glide or dive	214 m.p.h.	True Ind.
Propeller limits	Maximum permissible diameter 99 in. (May be increased to 102 in. with Item 313 installed).		
C.G. range	(-12.6) to (-4.0)		
Maximum weight	2650 lbs.		
No. seats	2 (1 (-4), pilot at (+38)) Eligible with a two-place front seat if installed in accordance with Waco Dwg. Nos. 23702 to 23718, inclusive. (See NOTE 2).		
Maximum baggage	25 lbs. (+69) (See NOTE 2 regarding 100 lbs. baggage capacity).		
Fuel capacity	50 gals. (2 tanks in center section at 25 gals.) (-13)		
Oil capacity	4 gals. (-43)		
Control surface movements	Aileron	23° up	13° down
	Elevator	40° up	17° down
	Rudder	30° right	30° left
Serial Nos. eligible	4659 and up (See NOTE 3)		
Required equipment	Items 101, 103, 104, 105 and 106.		

II - Model VPF-7, 2 POLB, Approved June 5, 1937

(Same as Model UPF-7 except engine. Empty weight approximately 10 lbs. greater).

Engine	Continental W670M or M1		
Fuel	80 min. octane aviation gasoline		
Engine limits	For all operations, 2175 rpm (240 hp M) or (250 hp M1)		
Airspeed limits	Level flight or climb	158 m.p.h.	True Ind.
	Glide or dive	214 m.p.h.	True Ind.
Propeller limits	Maximum permissible diameter 99 in. (May be increased to 102 in. with Item 313 installed).		
C.G. range	(-12.6) to (-4.0)		
Maximum weight	2650 lbs.		
No. seats	2 (1 (-4), pilot at (+38)) Eligible with a two-place front seat if installed in accordance with Waco Dwg. Nos. 23702 to 23718, inclusive. (See NOTE 2).		
Maximum baggage	25 lbs. (+69) (See NOTE 2 regarding 100 lbs. baggage capacity).		
Fuel capacity	50 gals. (2 tanks in center section at 25 gals.) (-13)		
Oil capacity	4 gals. (-50)		
Control surface movements	Aileron	23° up	13° down
	Elevator	40° up	17° down
	Rudder	30° right	30° left

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Serial Nos. eligible	4659 and up (See NOTE 3)
Required equipment	Items 101, 103, 104, 105 and 106.

Specifications Pertinent to All Models

Datum	Lower wing leading edge
Leveling means	Lower surface of upper wing at strut points.
Certification basis	Type Certificate No. 642 (Aero. Bulletin 7A requirements).
Production basis	None. Prior to original certification a CAA representative must perform a detailed inspection for workmanship, materials, and conformity with the approved technical data, and a check of the flight characteristics.
Export eligibility	Eligible for export to all countries except as follows subject to the provisions of ASR 312 (MOP 2-4 contains the same information): Canada - Landplane eligible Skiplane not eligible.

Equipment: A plus (+) or minus (-) sign preceding the weight of an optional items indicates the net weight change between that item and the equivalent required item.

Propellers and Propeller Accessories

105. Propeller - Curtiss Model 55501 - Max. dia. 8'0" - must be installed with blades at right angles to engine crankthrow (either 90 or 270 degree position). Restrict engine operation to 2000 rpm maximum and placard tachometer accordingly.	54 lbs. (-77)
206 or 316. Propellers	
(a) Fixed pitch wood	-12 lbs. (-77)
(b) Adjustable metal	+24 lbs. (-77)

Engines and Engine Accessories - Fuel and Oil System

101 or 307c. Starter (Eclipse E-80)	20 lbs. (-47)
203 or 307a & b. Starters	
(a) (Hand inertia)	+2 lbs. (-47)
(b) (Eclipse F-141)	+10 lbs. (-47)
205 or 310. Engine shielding	11 lbs. (-60)
207 or 323. Engine ring cowl	28 lbs. (-61)
210 or 304. One or two extra 12-1/2 gallon fuel tanks in upper wing	+15 lbs. ea. (-13)
305. 4-3/4 oil tank	No weight change
325. Engine, Continental (Model UPF-7 only)	
(a) W670K1	
Engine limits - For all operations, 2200 rpm (230 hp)	
(b) W670-6A or W670-6N	
Engine limits - For all operations, 2075 rpm (220 hp)	

Landing Gear and Floats

103. 7.50-10 wheels (Hayes 750M) and tires	60 lbs. (-24)
104. 10-1/2 in. streamline tail wheel	6 lbs. (+158)
208 or 301. Wheel streamlines	23 lbs. (-23)
(a) Pants	
(b) Cuffs	4 lbs. (-23)
209 or 314. Cactus Proof Tubes	+10 lbs. (-24)
313. 8.50-10 tires	+5 lbs. (-24)
318. Tail wheel lock	2 lbs. (+15)
324. 10 in. smooth contour tail wheel	5 lbs. (+158)
326. Skis (Eligible on any airplane of these models provided the propeller installation meets the minimum 9 in. ground clearance. The maximum weight for the skiplane will be the same as for the corresponding landplane or that shown in parenthesis after each ski model, whichever is less.)	Use actual weight change
(a) Federal SA-6 (Maximum 3000 lbs.)	
(b) Federal SC-6 (Maximum 4600 lbs.)	
(c) Federal SC-4 (Maximum 2850 lbs.)	
(d) Federal SC-4B (Maximum 2850 lbs.)	
(e) Richards Steel Ski (Maximum 4000 lbs.)	

Electrical Equipment

102 or 309.	(a) Battery (Exide 6-TS-13)	42 lbs. (-37)
	(b) Battery (Reading ARL-11)	25 lbs. (-37)
204 or 308.	Generators	
	(a) (Eclipse LV-180)	18 lbs. (-47)
	(b) (Eclipse G-2)	21 lbs. (-47)
	(c) (Eclipse D-2)	26 lbs. (-47)
302.	Landing lights (Grimes retractable)	+11 lbs.

Interior Equipment

106 or 311.	Seats	
	(a) Adjustable single front seat	8 lbs. (-4)
	(b) Adjustable single rear seat	8 lbs. (+38)
211 or 303.	Flares - Three 1-1/2 min.	+17 lbs. (+100)
306.	Miscellaneous extra instruments	
	(a) Front	25 lbs. (-21)
	(b) Rear	25 lbs. (+15)
319.	Parachutes or parachute type seats	
320.	Leather upholstery	
321.	Front cockpit cold air ventilator	5 lbs. (-48)
322. (a)	Front seat cushions	5 lbs. (-4)
	(b) Rear seat cushions	5 lbs. (+38)

Miscellaneous (not listed above)

201.	Miscellaneous items as noted in approved weight and balance report	
312.	Front cockpit cover	+6 lbs. (-4)
315.	Coupe top	+15 lbs. (+42)
317.	Special paint	+25 lbs. (+17)
327.	Winter front	8 lbs. (-68)
328.	Blind flying hood (Dwg. No. 23649)	3 lbs. (+38)

NOTE 1. Current weight and balance report including list of equipment included in certificated weight empty, and loading instructions when necessary, must be in each aircraft at the time of original certification and at all times thereafter.

NOTE 2. Serial Nos. 4650 through 4658 eligible with upper wing dihedral, small center section cut out, 2 passengers at (-4), baggage capacity of 100 lbs. (+69) and 25 lbs. (-23), narrow type landing gear (approximately 75 in. tread) and minor structural changes.

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